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Detailed Action

Claims 20-33, 49-58 are pending in this Office Action.

Claims 20 and 49 are independent.

Allowable Subject Matter

Claims 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Foreign Priority

The priority date of 12/7/01 is given priority.

Formal Drawings

The formal drawings received on 1/22/02 have been entered.

Response to Arguments

Applicant's arguments filed in the amendment filed 12/27/10, have been fully considered but they are not persuasive. The reasons are set forth below.

Applicant's invention as claimed:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-25, 30, 31, and 49-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (USPN 6,765,914) (hereinafter Jain) in view of Walker et al. (USPN 6,701,375) (hereinafter Walker) in further view of Goodwin (US 2002/0124107).

Referring to claim 20, Jain discloses a method of providing a VPN service through a shared network infrastructure comprising a plurality of interconnected provider edge (i.e. switches 120, 130, 140) having customer edge (i.e. hosts coupled via switch ports 123-125, 133-135, 143-145)) interfaces, wherein some of the CE interfaces are allocated to a VPN supporting a plurality of VLANs and are arranged for exchanging tagged data frames (i.e. tagged with VLAN-ID) with CE devices respectfully connected to the PE devices through said CE interfaces, the method comprising the following steps:

receiving at least one tagged frame from a CE device (i.e. receive a packet with VLAN ID) at each CE interface (i.e. switch port) allocated to said VPN, (Figure 4, VLANs 401, 402, and 403 have respective identifiers identifying the VLANs).

detecting whether a pair of CE interfaces allocated to said VPN and belonging to two PE devices correspond to a common VLAN identifier (i.e. determining whether a source address and a destination address correspond to the same VLAN) (col. 5 line 43 to col. 6, line 27); and

in response to such detection, establishing a connection (an inherent feature, otherwise the packet cannot be transferred between the PE devices) in the shared infrastructure between said two PE devices 120, 130 for forwarding the frame including said common VLAN identifier (i.e. forwarding the packet to the switch's bus connecting port, which receives the packet, and forwards the packet to the appropriate host) (col. 6, lines 1-10).

Jain does not disclose the connection is a virtual circuit in the shared network infrastructure between said two PE devices for forwarding frames including said VLAN ID, rather if a VLAN ID is not found, the packet is forwarded to all local switch ports and all other switches (col. 6, lines 1-28). In analogous art, Walker discloses another method of providing VPN services through a shared network infrastructure which discloses determining a routing to a

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destination CE (i.e. second host) device by issuing flooding address resolution requests (i.e. broadcast) to all other PE devices to determine where the destination device is, and then establishes a virtual circuit between the two PE devices (col. 2, line 51 to col. 3, line 15). It would have been obvious to one of ordinary skill in the art to combine the teaching of Jain with Walker in order to provide an efficient method of transferring packets, by creating a virtual circuit which efficiently and transparently transfers packets between devices, resulting in a more efficient use of bandwidth, which Jain acknowledges is a problem with the flooding of the packet (Jain: col. 6, lines 25-28 “even at the expense of bus bandwidth”).

Jain-Walker does not explicitly disclose the switch/router automatically learns the correspondence between the CE device and the VLAN identifier. In analogous art, Goodwin discloses another VLAN communication scheme wherein a switch will flood an unknown source MAC address to other switches such that the switches will learn the VLAN membership of the MAC address (§ 20-22). It would have been obvious to one of ordinary skill in the art to substitute the VLAN formation system of Jain-Walker with the VLAN learning system of Goodwin in order to realize the benefits of Goodwin to the system of Jain-Walker, specifically by reducing the manual assignments needed to configure the switches for correct routing of the packets. By using Goodwin, the switches automatically learn the VLAN membership of each of the client devices, thereby saving precious man-hours over the prior art approach.

Referring to claim 21, Jain-Walker discloses establishing a respective flooding virtual circuit in the shared network infrastructure between each pair of PE devices having at least CE interface allocated to said VPN (i.e. broadcasting) (Walker: col. 2, lines 60-65).

in response to reception of a first tagged frame including a VLAN identifier at a first CE interface, propagating said first tagged frame on each flooding VC established from the first PE device (col. 2, lines 60-65);

in response to reception of the first aged frame on a flooding VC at another PE device, propagating a frame to each CE device (col. 7, lines 10-20).

Referring to claim 22, Jain-Walker discloses the correspondence between the first CE interface and the VLAN identifier is learnt in response to the reception of the first tagged frame including

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said VLAN identifier at the first CE interface (i.e. learning the routing and destination of a particular address for a connection) (Walker: col. 6, lines 20-35).

Referring to claim 23, Jain-Walker discloses allocating, at the first PE device, a first virtual circuit resource for said VPN and the VLAN identifier (i.e. source/destination pairing) included in the tagged frame (i.e. creates a virtual circuit) (Walker: col. 6, lines 35-45);

transmitting a first signaling message from the first PE device to each other PE device having at least one CE interface indicating the first virtual circuit resource (i.e. circuit) and VLAN identifier (Walker: col. 6, lines 38-63

in response to reception of the first signaling message at each other PE device, storing an identification of the first virtual circuit resource in association with said VPN and VLAN identifier (Walker: col. 6, lines 38-63).

Referring to claim 24, Walker discloses transmitting a second signaling message from said other PE device to the first PE device thereby completing establishment of a VC, defined by the first and second VC resource (col. 6, lines 38-63).

Referring to claim 25, Walker discloses two VC's are used to forward data in two directions ("used to establish a static route back to the host") (col. 6, lines 50-57).

Referring to claim 30, Jain-Walker disclose the invention as described in the claims above, however do not specifically limit the amount of CE devices to two or less. However Walker does show that only one CPE device (i.e. Host) is connected to an edge node (i.e. router) (Figure 1). This would motivate one of ordinary skill in the art to put any arbitrary number of nodes on a PE device. By this rationale, "Official Notice" is taken that both the concept and advantages of providing for no more than two CE interfaces is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Jain-Walker to provide no more than two CE devices in order to provide adequate service to the customer, without requiring numerous connections to various devices.

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Referring to claim 31, Jain-Walker disclose the invention substantively as described in claim 20, however do not specifically disclose that the CE interfaces are Ethernet interfaces, however Ethernet is well known in the networking art for interacting with VPNs. By this rationale, “Official Notice” is taken that both the concept and advantages of providing Ethernet interfaces is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching to include Ethernet in order to include various different networking interfaces, thereby allowing more computers to be connected to the network.

Claims 49-54 are rejected for similar reasons as stated above.

Claims 26, 27, 32, 33, and 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain in view of Walker in view of Goodwin as applied above, in view of Fotedar et al. (USPN 6,944,159) (hereinafter Fotedar).

Referring to claims 26 and 27, Jain-Walker discloses the invention substantively as described in claim 24. Jain-Walker do not specifically disclose the use of MPLS labels and signaling messages for transferring MPLS labels. In analogous art, Fotedar discloses another VPN service provision system which discloses disturbing MPLS labels and VLAN ids (e.g. abstract). It would have been obvious to one of ordinary skill in the art to combine the teaching of Fotedar with Jain-Walker in order to provide transparent connectivity between an nodes in a network as supported by Fotedar (col. 1, lines 30-45).

Claims 32, 33, and 55-58 are rejected for similar reasons as stated above.

REMARKS

The board of appeal affirmed the examiner and rejection of 3/19/08 and 9/16/08.

Applicant filed an RCE on 12/27/10 with no amendments.

The Applicant Argues:

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On pages 1 and 2 of the response, applicant argues the Goodwin reference is invalid prior art because it should not be award the priority date of 12/19/2000 of provisional application 60/256829.

In response, the examiner respectfully submits:

The examiner upon careful inspection finds the priority date of 12/19/2000 to be proper and sufficient in determining prior art over the claimed limitation.

First, with respect to the arguments of page 1 and 2, the number of pages of a priority document and number of drawings in a provisional versus a non-provisional filing is insufficient in traversing priority to the provisional.

On page 3, applicant begins arguing previously argued features (see “applicant has argued in the appeal brief.” In Res Judicata (see MPEP 706.03(w)) supports such conclusion as the appeal brief repeats features and arguments that were argued in the previous appeal and already considered by the Board.

Thus claims 20-27, 30-33, 49-58 are also rejected under Res Judicata based on the prior art rejections of Jain et al. (USPN 6,765,914) (hereinafter Jain) in view of Walker et al. (USPN 6,701,375) (hereinafter Walker) in further view of Goodwin (US 2002/0124107) and the board decision.

On pages 3-4, of the remarks, applicant points to para 55 of the instant applications published specification to provide evidence for differing from Goodwin. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., “the frame is propagated to any other local CE port of the PE device which has been configured for the VPN-id retrieved in step 32) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The arguments not considered by the Board are the properness of priority of Goodwin to the provisional application (listed above and addressed below).

On page 4, applicant draws similarities between the Provisional '829 and the later filed non-provisional published app '4107. Applicant does a fair and good job mapping the Goodwin publication reference paragraphs to the provisional paragraphs. The examiner maintains and concurs that the provisional reference provides sufficient evidence to support the later filed/published Goodwin '4107 reference. Publication para 15 is mapped to provisional page 1, 2nd paragraph. Para 17 is mapped to provisional paras 3 and 4. Para 25 is mapped to the 4th paragraph of page 2 of the provisional app. The key features which are cited and relied upon are "source learning" "VAP" "VLANs" and "membership" are all present and sufficiently described.

On page 7 of the response, applicant argues the Autotracker assigning frames to a VLAN is not the same as claimed in claim 20. The examiner disagrees. While autotracker is only one of the two functions that help, Provisional app '829 third complete paragraph of page 2 teaches connectivity and learning of correspondence between device and VLANs, just as it was decided in the board decision. “

On page 8, applicant argues Goodwin is restricted because it fails to teach the limitation in question. The examiner again disagrees. Appellant's attention is directed to pages 1 and 2 of the provisional that states that VLAN membership can be learned within the switch using a function called “source learning” which apply to VLAN policies during processing of all unknown frames. The router maintains a “source learning” related database. This information stored is found out source learning policies and observed traffic. VAP can then take information learned from this functionality and then distribute it to the other switches. In this way VAP is considered a separate function than the source learning.

One of ordinary skill in the art employ source learning to learn the VLAN information from all unknown packets, not just packets originating from WAN side of the switch, rather would learn the correspondences from the LAN side as well (i.e. switch 1 102 would learn the VLAN correspondences from endstations 108-112 using the “source learning” function of the switch. This clearly demonstrates that Goodwin learns the correspondences between CE devices and VLANs and therefore the rejection should be maintained.

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On page 9, applicant argues that applicant took the provisional application, added detail amplified its contents adding text and drawings and states the provisional does not have the feature of "learns the correspondence between the CE device and the VLAN identifier." The examiner points to the support and detail above and cites the board decision for additional support. Applicant is mistaken. The limitation in question is broad and reaching and applicant must rely on detailed specification support to define it.

On page 10, applicant argues para 26 needs further detail to be given weight. The examiner directs applicant to the provisional pages 5-7 in which the detail are disclosed. Further since we are looking at the provisional in additional detail, applicant is asked to consider Frame formats of page 9, VLAN mask (6th bullet). This shows a clear mapping of host to VLAN group. As far as learning is concerned, see cited above protocols and frames described in pages 7-12 for detail on how that information is shared.

The examiner maintains the priority of the Publication 2002/124107 Goodwin to its provisional 60/256829 is proper and well supported.

Conclusion

Applicant has failed to seasonably challenge the Examiner's assertions of well known subject matter in the previous Office action(s) pursuant to the requirements set forth under MPEP §2144.03. A "seasonable challenge" is an explicit demand for evidence set forth by Applicant in the n

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN R. BRUCKART whose telephone number is (571)272-3982. The examiner can normally be reached on 8:30-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey C. Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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